UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF CONGRESSIONAL AND
INTERGOVERNMENTAL RELATIONS

The Honorable Barbara Boxer
Chairman
Committee on Environmental and Public Works
United States Senate
Washington, DC 20510

Dear Chairman Boxer:

Thank you for your letter of May 3, 2011 requesting responses to questions for the record following the April 12, 2011 hearing before the **Full Committee and Subcommittee on Water and Wildlife** titled, **"Natural Gas Drilling: Public Health and Environmental Impacts."**

The responses to your questions are provided as an enclosure to this letter. Again, thank you for your letter. If you have further questions, please contact me, or your staff may contact Pamela Janifer in the EPA's Office of Congressional and Intergovernmental Relations at (202) 564-6969.

Sincerely,

Laura Vaught

Laura Vaught
Deputy Associate Administrator for
Congressional Affairs

Enclosure

EPA Response to May 3, 2011 Hearing on "Natural Gas Drilling: Public Health and Environmental Impacts"- Questions for the Record

Senator Barbara Boxer

1. ***During the EPW hearing on April 12, you testified that the plain language of the Energy Policy Act of 2005 prohibits the use of diesel fuel in hydraulic fracturing without first obtaining a Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) permit. Do you agree that the SDWA can currently be enforced with respect to the use of diesel fuel in hydraulic fracturing?***

Response:

EPA agrees that the SDWA can be enforced with respect to the use of diesel fuels in hydraulic fracturing. EPA will evaluate on a case-by-case basis any potential violations of the SDWA that it discovers from the injection of diesel fuels into wells.

2. ***Mr. Perciasepe, there have been reports in the media about significant air pollution from natural gas drilling. We have seen reports of ozone pollution in certain counties in Western States where the air quality is significantly above health standards. How is EPA addressing the threats to public health caused by air emission from natural gas drilling operations?***

Response:

EPA addresses air emissions from the oil and gas industry through both regulatory and voluntary programs. On the regulatory front, EPA has New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations designed to reduce emissions of volatile organic compounds (VOCs), sulfur dioxide (SO2), and air toxics from the oil and natural gas industry. On the voluntary front, EPA has implemented the Natural Gas STAR Program, which has achieved significant methane reductions by encouraging environmentally sound practices.

In a recent review of its air regulations, EPA determined that current regulations do not address air emissions from certain sources of VOCs in this sector, including hydraulically fractured wells. On July 28, 2011, EPA proposed a suite of highly cost-effective revisions to the NSPS and NESHAP that would address these findings and further reduce harmful air pollution from the sector while supporting the Administration's priority of continuing to expand safe and responsible domestic oil and natural gas production. The proposed rules would apply to oil and gas exploration and production and natural gas processing, transmission, and storage.

The proposed rules would cut smog-forming VOC emissions by nearly one-fourth across the regulated sector, including a nearly 95 percent reduction in VOCs emitted from new and modified hydraulically fractured gas wells. The VOC emission reductions from wells, combined with reductions from storage tanks and other equipment, are expected to help reduce ozone levels in areas where oil and gas production occurs. This significant reduction would be accomplished primarily through use of a proven technology – in use by many Gas STAR partners – to capture natural gas that currently escapes to the air. The captured gas would then be made available for sale.

In addition, the reductions would yield a significant environmental co-benefit by reducing methane emissions from new and modified wells. Oil and natural gas production and processing accounts for nearly 40 percent of all U.S. methane emissions, making the industry the nation's single largest methane source.

The comment period on the proposed rules was extended and closed November 30, 2011. EPA is under a court order to issue final rules by April 3, 2012.

With respect to voluntary programs, since 1993 EPA has been working with the oil and natural gas industry through the Natural Gas STAR Program to reduce methane emissions from all industry sources, including well drilling. Reducing emissions of methane, a potent greenhouse gas, has climate change benefits and also yields important air quality, human health, and financial benefits. Through the Natural Gas STAR program, EPA and partner companies have identified over 80 technologies and practices that can cost-effectively reduce emissions from the oil and natural gas sector, and Gas STAR partners have reported domestic emission reductions of 86 billion cubic feet (Bcf), worth over $344 million, in 2009, and reductions of greater than 900 Bcf, worth over $3.6 billion, over the life of the program.

To address air quality impacts associated with oil and gas activities on Federal Lands, EPA recently entered into a Memorandum of Understanding (MOU) with the U.S. Department of the Interior (DOI), and the U.S. Department of Agriculture (USDA) that outlines a number of steps the agencies will take to ensure that federal laws protecting air quality, human health, and the environment are balanced with the nation's energy needs. The MOU, signed on June 23, 2011, provides for early interagency consultation; common procedures for determining what type of air quality analyses are appropriate and when air modeling is necessary; and specific provisions for analyzing and discussing impacts to air quality and for mitigating such impacts as part of the environmental review process required by the National Environmental Policy Act (NEPA).

In addition, EPA's Office of Enforcement is investigating potential violations of the Clean Air Act (CAA) associated with natural gas extraction and production activities. As part of the Agency's Energy Extraction National Enforcement Initiative, EPA will take appropriate action to address violations of the Clean Air Act from this sector, particularly where there are potential impacts to human health.

3. Mr. Perciasepe, landowners who rely on drinking water from wells located near hydraulic fracturing operations need to know that their drinking water is safe. However, they may not have the necessary information on chemicals used in drilling operations to carry out baseline testing of their water supplies. Docs EPA have any guidance to homeowners on the specific chemicals to include in baseline testing of their drinking water wells? Does EPA intend to issue such advice to the public?

Response:

If citizens have concerns about the safety of their drinking water they should contact their public water system, state health department, or environmental agency for information on sampling and testing water. In Pennsylvania, the State has requested that public water systems test for chloride, sulfate, bromide, pH, and radionuclides (i.e., gross alpha, gross beta).

We have established a hotline for individuals to report any observed environmental concerns associated with drilling operations. Citizens may call 1-877-919-4EPA (toll free) or send reports by email to eyesondrilling@epa.gov.

While EPA currently does not have guidance on specific chemicals to include in baseline testing, the New York State Water Resources Institute (WRI) does provide detailed information on testing of private wells. WRI is a federally mandated institution helping to improve water management and has information available at http://wri.eas.cornell.edu/gas_wells_6_1489175471.pdf.

4. ***In your written testimony, you state that EPA is currently considering revising its Clean Water Act regulations establishing effluent limitation guidelines (ELGs) to address coal bed methane (CBM) flowback wastewater and that EPA is also considering how to best address shale gas process wastewater discharged to publicly owned treatment works (POTWs) or commercial centralized waste treatment facilities (CTWs). Please provide the Committee with an update concerning EPA's plans to address wastewater discharges, including revising the Clean Water Act ELGs for CBM and shale gas process wastewaters discharged to POTWs or CWTs.***

Response:

On October 20, 2011, EPA announced that it will develop effluent guidelines for discharge of wastewater from the coalbed methane extraction industry and will develop pretreatment requirements for discharges of wastewater from the shale gas extraction industry. To ensure that these wastewaters receive proper treatment and can be properly handled by treatment plants, EPA will gather data, consult with stakeholders, including ongoing consultation with industry, and solicit public comment on a proposed rule for coalbed methane in 2013 and a proposed rule for shale gas in 2014.

Senator Benjamin L. Cardin

1. ***Does the Clean Water Act allow a wastewater treatment works facility to accept wastewater consisting of unknown contaminants? Does the Act allow a wastewater treatment facility to accept wastewater containing contaminants for which it does not have effluent limitations in its NPDES permit? Does the Act allow a wastewater treatment works to "pass through" contaminants that it cannot adequately treat, thereby passing the contaminants through to discharged water? Does the Act allow a publically owned treatment works facility to accept wastewater that may cause interference with the proper functioning of the treatment process? If the answer is no to any of these questions, please provide the reference in the Act which prohibits these actions. Further, for any question in which the answer is no, please indicate what actions EPA is taking to ensure that treatment works facilities comply with the provisions of the Clean Water Act?***

Response:

The CWA prohibits the discharge of pollutants by point sources into waters of the United States, except in compliance with certain provisions of the CWA, including section 402. 33 U.S.C. 1311(a). Section 402 of the CWA establishes the National Pollutant Discharge Elimination System ("NPDES") program, under which EPA, or an authorized state agency, may issue a permit allowing the discharge of pollutants into waters of the U.S. 33 U.S.C. 1342(a). When developing effluent limitations for an NPDES permit, a permit writer must consider limits based on both the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits). CWA section 301, 33 U.S.C. § 1311; 40 CFR 125.3(a). The technology-based requirements for direct discharges from oil and gas extraction facilities into surface waters are found in 40 Code of Federal Regulations (CFR) Part 435 (see response to question 7, below).

Section 308 of the CWA provides broad authority to require information from point sources in order to characterize the nature of their discharges. Pursuant to CWA Section 308, NPDES regulations at 40 C.F.R. § 122.21 provide specific requirements for the submission of information for owners or operators seeking an individual NPDES permit. In accordance with these regulations, it is the responsibility of the applicant to characterize the wastewater to be discharged from the permitted facility and to provide the information necessary for the permitting authority to make informed decisions.

In order to submit a complete NPDES permit application for an individual permit, the applicant must present data to properly characterize its discharge to enable a reasonable potential analysis to be completed by the permit writer at the time of permit issuance. 40 C.F.R. § 122.21(g)(7). In addition to data specifically required by permit applications, 40 C.F.R. § 122.21 allows permitting authorities to request any additional data as necessary to support an assessment of potential water quality impacts.

The procedure for determining the need for Water Quality Based Effluent Limitations (WQBEL) is called a "reasonable potential" determination. Under EPA's regulations at 40 C.F.R. § 122.44(d)(1)(i), WQBELs are required for all pollutants that the permitting authority determines "are or may be discharged at a level [that] will cause, have the reasonable potential to cause, or contribute to an excursion above any [applicable] water quality standard, including State narrative criteria for water quality." Thus, if a pollutant discharge has the reasonable potential to cause or contribute to an excursion above any applicable water quality standard – including narrative criteria – the discharger's

NPDES permit must contain a WQBEL for that pollutant. 40 C.F.R. § 122.44(d)(1)(iii)-(vi). Conversely, if a pollutant discharge does not have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, a WQBEL is not necessary for that pollutant. If that pollutant in the discharge is also not subject to applicable technology-based requirements, then the permit would not need an effluent limit for that pollutant.

In addition to direct discharges, wastewaters may be indirectly discharged into waters of the U.S. through sewer systems connected to publicly owned treatment works (POTW) that discharge directly to waters of the U.S. or by being introduced by truck or rail into a POTW that discharges directly. EPA regulations set standards for the pretreatment of wastewater introduced to a POTW including prohibiting introduction of wastes that interfere with, pass through or are otherwise incompatible with POTW operations. 33 U.S.C. § 1317(b)(1). EPA has developed other nationally applicable pretreatment standards under section 307(b) in its General Pretreatment Regulations for Existing and New Sources of Pollution (Pretreatment Regulations) at 40 C.F.R. Part 403. These pretreatment standards are applicable to any user of a POTW, defined as a source of an indirect discharge. 40 C.F.R. 403.3(h). These national pretreatment standards include: 1) a general prohibition and 2) specific prohibitions. 40 C.F.R. 403.5.(a)(1) and (b). The general prohibition prohibits any user of a POTW to introduce a pollutant into the POTW that will cause pass through or interference. The regulations define both pass through and interference. Section 307(d) of the Act prohibits discharge in violation of any pretreatment standard. 33 U.S.C. § 1317(d).

On October 20, 2011, EPA announced that it will develop effluent guidelines for discharge of wastewater from the coalbed methane extraction industry and will develop pretreatment requirements for discharges of wastewater from the shale gas extraction industry. To ensure that these wastewaters receive proper treatment and can be properly handled by treatment plants, EPA will gather data, consult with stakeholders, including ongoing consultation with industry, and solicit public comment on a proposed rule for coalbed methane in 2013 and a proposed rule for shale gas in 2014.

2. ***The Chesapeake Bay Foundation and a number of other petitioners recently filed a citizen petition requesting the completion of a programmatic environmental impact statement addressing the cumulative impacts of drilling in the Marcellus Shale formation. Given the dramatic expansion of drilling activity in the Marcellus Shale region, the potential impacts on water resources, air quality, management of hazardous chemicals, forest fragmentation, and extensive socio-economic impacts, does EPA support the petitioners' request?***

Response:

EPA is aware of the concerns raised by the Chesapeake Bay Foundation and other stakeholders regarding the potential impacts associated with natural gas hydraulic fracturing in the Marcellus Shale formation. We are working with the other federal agencies, which also received the petition, to carefully consider the matter and expect to respond to the petition within a reasonable time.

3. ***The House Committee on Energy and Commerce undertook a study of hydraulic fracturing that revealed that twelve drilling service companies had injected underground over 32 million gallons of fluids containing diesel fuels from 2005-2009. The results of this investigation were disclosed in a letter to EPA Administrator Jackson. Can EPA verify the accuracy of these figures? What additional investigation into these allegations is EPA conducting?***

Response:

The figures used in the House Committee on Energy and Commerce investigation come directly from the service companies themselves. The House investigation is based on only those companies who cooperated with the House request for information regarding chemicals used in hydraulic fracturing activities. Because data submitted to the House Committee is considered proprietary information, EPA is not legally able to view the information in order to verify it.

However, EPA has gathered data on fracturing fluids from nine service companies as part of the study we are conducting on the potential relationship between hydraulic fracturing and drinking water resources. Three of these companies are the same as in the House investigation (BJ Services, Halliburton, and Schlumberger), and EPA is reviewing those data at this time. However, we are unable to independently verify the quantities reported by the House Committee on Energy and Commerce due to the nature of the information provided by the Committee. EPA requested data from BJ Services, Complete Production Services, Halliburton, Key Energy Services, Patterson-UTI, RPC, Inc., Schlumberger, Superior Well Services, and Weatherford.

4. ***In response to questions from Senator Udall, you stated that the use of diesel-containing fracking fluids without a Safe Drinking Water Act permit would constitute a violation of the Act. How many cases of such activities has EPA become aware of? What legal actions are the Agency or its delegated authorities taking in each instance?***

Response:

Based on information described in an October 25 letter to EPA Administrator Lisa P. Jackson from Reps. Waxman, Markey, and DeGette, EPA is aware that a number of oil and gas service companies collectively injected 32.7 million gallons of diesel fuels and fluids containing diesel fuels into wells between 2005 and 2009. EPA will evaluate on a case-by-case basis any potential violations from the injection of diesel fuels into wells and the disposal of wastewater that it discovers, including whether to initiate follow-up enforcement action.

Senator James M. Inhofe

1. ***In House Report 111-316, EPA was tasked with doing a hydraulic fracturing study:***

- ***1a. EPA's initial plan was to look at many other aspects of hydraulic fracturing, such as air impacts and environmental justice, in addition to "the relationship between hydraulic fracturing and drinking water." In light of what will probably be increasing timing and budget concerns, what steps will EPA take to maintain its focus on the Congressional request so that the American people get the most accurate and valid data in an expedient fashion?***

Response:

The research that will be conducted pursuant to the final study plan focuses on the potential impacts of hydraulic fracturing on drinking water resources, which is consistent with the Congressional request. Areas of research such as air impacts and ecosystem impacts are considered to be outside the scope of the current study. Ensuring that all Americans have access to a clean and safe environment, including safe drinking water, is an EPA-wide priority. As such, the final study plan emphasizes research to identify the factors that may contribute to impacts, if any, on drinking water resources in communities across the nation. In this context, the plan proposes an initial assessment to determine the extent to which hydraulic fracturing occurs in minority, low income, and indigenous communities. EPA incorporated the advice of its Science Advisory Board into the final study plan to be sure the study will address the highest priority potential public health and environmental concerns.

- ***1b. Will there be a section in the study putting the environmental and public health risk profile identified by EPA into the current state and federal regulatory context, including guidance and other requirements used to regulate the industry? If so, please explain how.***

Response:

This study will not evaluate the efficacy of the existing regulatory framework because EPA considers this to be outside of Congress's request. The goal of EPA's study is to examine the conditions that may be associated with the potential contamination of drinking water resources, and to identify the factors that may lead to human exposure and risks. While the study will evaluate existing data on the efficacy of existing treatment technologies, it will not focus on existing regulatory requirements applicable to hydraulic fracturing operations or specific opportunities for future regulation.

- ***1c. One area EPA has indicated it will be focusing on—water use—is outside of the scope of the authorizing language. Water use is largely the province of state law and has evolved over the past two hundred plus years. Water use—for any purpose—will be subject to a well-established state legal structure that defines its acquisition. Hydraulic fracturing is no exception. Water used for the fracturing process must be obtained within this system. How will the study account for, work within, and recognize state and local water use laws?***

Response:

EPA designed the study to address the lifecycle of hydraulic fracturing operations, a scope which its Science Advisory Board considered appropriate. The study will consider the use of water in hydraulic fracturing operations, from water acquisition through the mixing of chemicals and actual fracturing to the post-fracturing stage, including the management of flowback and produced water and its ultimate

treatment and/or disposal. This study will not evaluate or make recommendations related to well-established state and local water use laws or structures because EPA considers this to be outside the scope of Congress's request.

- ***1d. What information will EPA include regarding how the gas industry's water use compares to water use by other energy sources?***

Response:
EPA's study will not compare water use by the natural gas industry to water use by other energy sectors. We plan to account for the differences in the nature of water use in hydraulic fracturing (e.g., potential return to the environment versus permanent loss in deep formations) and the related impacts on water quality (e.g., the identity, concentrations, and treatability of contaminants).

- ***1e. Our domestic natural gas industry has a wealth of experience about all aspects of hydraulic fracturing. Industry personnel necessarily have been present as thousands of gas wells have been developed. What steps will EPA take to be certain it gains the benefit of that experience?***

Response:

Stakeholders have played an important role as EPA developed its study plan and as it carries out the study. EPA involved stakeholders—including industry personnel—from the early stages in the development of the study plan and will continue to provide mechanisms for stakeholder involvement throughout the duration of the study. Prior to developing the study plan, EPA held a series of public meetings and webinars with interested stakeholders to hear their comments related to hydraulic fracturing. EPA also reviewed and considered public comments submitted to the Science Advisory Board as part of its review of the draft study plan.

EPA has also engaged experts through a series of four technical workshops on hydraulic fracturing. These workshops provided EPA researchers with an opportunity to discuss technical issues with experts from industry, academia and elsewhere. The information provided by industry and other participants at the workshops will inform the research we conduct as part of the current study.

- ***1f. Certain sources that are cited in the Draft Study Plan are from well-known environmental activist groups and are weighing in with respect to issues that will be relevant to the outcome of the EPA study. How will information or citations from advocates be used in the study in an objective manner? Will the information provided by such individuals or entities be noted in the study? If there are any references to such data, would you commit to disclosing clearly the originator's known position so that the general public will have the opportunity to evaluate objectively all information offered in the Draft?***

Response:

In the interest of transparency and objectivity, EPA will provide full, properly reported and cited references on the source of all studies, reports and data cited in our study. EPA will consider the quality of data and information in our decision to cite or otherwise rely on information. Additionally, all research products will undergo a peer review process. EPA will not seek disclosure of positions of authors or providers of data or information used by the study.

- ***1g. Does the EPA still expect to release an interim report by 2012 that focuses only on the results of the retrospective case studies and scenario evaluations?***

Response:

There is a great deal of public interest in the current study. While we realize that some of the research projects identified in the draft study plan are long-term projects, we feel that it is our responsibility to publish results as soon as possible. The 2012 report will allow us to communicate results from shorter-term projects in the proper context.

- ***1h. Does the draft plan include a process by which EPA can update its research findings as technology advances? For example, I understand that the hydraulic fracturing service industry is continuously working to improve treatments and disposal methods to reduce the environmental risk associated with produced water and flowback fluid. Best practices are being employed by a growing number of responsible fracturing companies across a broad spectrum of practices. What is EPA doing to develop a process by which it can periodically update its research findings to account for technological advances and these best practices?***

Response:

EPA is working with stakeholders to identify up-to-date information on the technology and practices used in hydraulic fracturing operations, including wastewater treatment and disposal. Consequently, the 2012 and 2014 reports will reflect the most current information available.

- ***1i. How does the Study Design Draft effectively distinguish between those issues that are fracturing related and those that exist at all natural gas and oil production activities?***

Response:

The Draft Hydraulic Fracturing Study Plan focuses on features of oil and gas production that are particular to—or closely associated with—hydraulic fracturing, and their impacts on drinking water resources. The SAB- supported this approach and specifically cautioned EPA against studying all aspects of oil and gas production, stating that the study should "emphasize human health and environmental concerns specific to, or significantly influenced by, hydraulic fracturing rather than on concerns common to all oil and gas production activities."

2. *EPA has been studying the possibility of developing effluent limitations guidelines for the coalbed methane (CBM) extraction sector of the oil and gas industry since 2006. Based on a series of Federal Register notices and industry surveys, a decision on the CBM sector was expected as part of the final 2010 Effluent Guidelines Program Plan Report, slated for publication in December of 2010.*

2a. What is the status of the report that was due to be published in December of 2010?

Response:

EPA announced the 2010 Effluent Guidelines Plan on October 20, 2011, and a Federal Register notice was published on October 26, 2011. The final Coalbed Methane Study was also issued with the Plan and is available on our website at http://water.epa.gov/lawsregs/lawsguidance/cwa/304m/.

- ***2b. What evidence does EPA have to suggest that these Centralized Waste Treatment Point (CWTP) guidelines are insufficient to cover treatment of well site wastewaters?***

Response:

For both CBM and Shale Gas Extraction (SGE) the wastewater contains high concentrations of Total Dissolved Solids (TDS). The concentrations of TDS differ between the two sectors with SGE wastewater having very high TDS concentrations (typically over 100,000 up to 400,000 mg/L), whereas CBM wastewater reflects a broad range of TDS concentrations (<50 to 171,000 mg/L) depending on the coal formation and the location of the well within the formation.

As described in the EPA's final effluent guidelines program plan, operators may dispose of shale gas wastewater by sending it to POTWs or to private centralized waste treatment facilities (CWTs). The vast majority of POTWs employ equalization, bulk solids removal, biological treatment, and disinfection. POTWs are likely effective in treating only some of the pollutants in shale gas wastewater, such as the conventional and organic pollutants. These treatment technologies are not designed to treat high levels of TDS, naturally occurring radioactive material (NORM), or high levels of metals[1]; it is believed that much of these pollutants pass through the POTW untreated. Many CWTs, of which 90% discharge to POTWs, are similarly not designed to treat for high TDS or NORM.

- ***2c. EPA currently regulates industrial effluent to CWTP. The guidelines are broadly applicable to numerous industries, including ELG activities, and account for the constituents that EPA is most concerned about controlling. Has there been a finding that these regulations are ineffective? If so, where is the finding?***

Response:

The Agency has not issued a finding about the effectiveness or lack thereof of the CWT effluent guidelines. See previous response for an explanation of our basis for initiating rule makings related to CBM and SGE wastewaters.

- ***2d. How does adding this regulation comply with the President's January 18th, 2011 Executive Order? Will EPA be coordinating with the Whitehouse or CEQ to justify the singling out of the ELG industry for duplicative regulation?***

Response:

EPA intends to fully comply with E.O. 13563 as it proceeds to develop effluent limitations guidelines for these industry sectors. No comprehensive set of national standards exists at this time for the disposal of wastewater discharged from natural gas extraction activities. To ensure that these wastewaters receive proper treatment and can be properly handled by treatment plants, EPA will gather data, consult with stakeholders, including ongoing consultation with industry, and solicit public comment on a proposed rule for coalbed methane in 2013 and a proposed rule for shale gas in 2014. The final standards will undergo interagency review pursuant to EOs 13563 and 12866 before being finalized.

[1] Metcalf & Eddy Inc. (2003) Wastewater Engineering: Treatment and Reuse McGraw-Hill, New York.

- ***2e. What less burdensome alternatives is EPA exploring to achieve the performance objective?***

Response:

As EPA develops ELGs for these industry sectors, EPA plans to gather data from industry and use that data to develop appropriate technology options. EPA typically identifies a range of options and selects an option based on statutory criteria and other relevant factors, including industry affordability.

- ***2f. Will there be a qualitative and quantitative cost benefit analysis on which the public can comment?***

Response:

As parts of our ELG development efforts, we plan to evaluate the environmental impacts associated with the wastewater discharges from the two industries. In addition, EPA will assess the costs of various regulatory options, the financial impacts of these costs on the industry, and expected benefits. The proposed rule will include a summary of the environmental assessment, including qualitative and quantitative aspects, and will provide an opportunity for public comment. If the proposed requirements are considered significant as defined under E.O. 12866, the Agency will also estimate the monetized value of the environmental benefits.

- ***2g. How has EPA coordinated with the regulated community?***

Response:

EPA began its study of CBM in 2006. Early in the study EPA held several meetings in the CBM producing basins so that we could meet as many industry representatives as possible and visit a number of production sites to observe practices. Additionally, EPA held conference calls and meetings with industry representatives throughout the course of the study. Over the coming months, EPA will begin the process of developing a proposed standard for the CBM and SGE sectors with the input of stakeholders, including industry and public health groups.

- ***2h. Given the regulatory programs already in place, why does EPA feel the need for more regulation? Is there a regulatory gap the Agency has identified? If so, where is the gap and what is the evidence to support the existence of an alleged gap? Is the Agency simply basing its analysis on a few anecdotes?***

Response:

As described in the EPA's final 2010 Effluent Guidelines Program Plan, what we know is that shale gas extraction generates extremely large volumes of wastewater that contain considerable pollutant loads. Some of this is being responsibly reinjected into appropriate underground wells; other volumes of wastewater may not be treated effectively by existing treatment facilities. Resulting discharges have the potential to affect both drinking water supplies and aquatic life. These concerns and issues will not dissipate as shale gas production is expected to increase. As a result, EPA has decided to initiate rulemaking to decide the appropriate level of pretreatment standards for this industry. Also see the response to Question 2b above for an explanation of our basis for initiating rule makings related to CBM and SGE wastewaters.

3. Please clarify the statement that you made at our hearing that oil and gas drillers who injected diesel fuel during hydraulic fracturing without a permit broke the law.

Response:

Under the Safe Drinking Water Act (SDWA), any underground injection which is not authorized by permit (or in some cases, by rule) is prohibited. In the Energy Policy Act of 2005, Congress amended the SDWA definition of "underground injection" to exclude hydraulic fracturing related to oil, gas, or geothermal production activities, except for when diesel fuels are used. Therefore, an underground injection control permit is required for the injection of diesel fuels during hydraulic fracturing related to oil, gas, or geothermal production activities, and any unauthorized injection of diesel fuels was in violation of the law.

Senator David Vitter

In testimony before our Committee, Deputy Administrator Perciasepe asserted that "using diesel fluids for hydraulic fracturing in shale... is subject to the Safe Drinking Water Act" and that operators would be required to have a permit in order to do so, indicating that not doing so would be a violation of the law. Given the assertions he made, the agency presumably has done a rigorous analysis of the law and has developed a new legal theory that would explain why operators now apparently must obtain a permit even though the agency in the past took a different position. To help us better understand the agency's position and so that the hearing record is complete, we ask that you answer the following questions:

1. ***What was EPA's basis for concluding that wells being hydraulically fractured with fluids containing diesel fuel should be considered to be Class II wells under EPA's VIC regulatory scheme given the Agency's prior consistent position that "EPA's Class II regulations were not designed to, and do not specifically address the unique technical and temporal attributes of hydraulic fracturing," and that it was "not entirely appropriate to ascribe Class II status" to wells being hydraulically fractured?***

Response:

Class II wells receive fluids

- *Which are brought to the surface in connection with natural gas storage operations or conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection*
- *For enhanced recovery of oil or natural gas; and*
- *For storage of hydrocarbons which are liquid at standards temperature and pressure. (40 CFR § 144.6(b))*

In 1997, the Eleventh Circuit Court of Appeals established that hydraulic fracturing is "underground injection" for the purposes of regulation under the SDWA. Legal Environmental Assistance Foundation, Inc. v. EPA, 118 F.3d 1467 (11th Cir. 1997) (LEAF I). The same court later established that wells used for the injection of hydraulic fracturing fluids must be regulated as Class II wells under the UIC program. Legal Environmental Assistance Foundation, Inc. v. EPA, 276 F.3d 1253 (11th Cir. 2001) (LEAF II). The court held that EPA must classify hydraulic fracturing as one of the five existing well classes and that "wells used for the injection of hydraulic fracturing fluids fit squarely within the definition of Class II wells" used for enhanced recovery of oil or natural gas.

SDWA § 1421(d)(1), as amended by the Energy Policy Act, excludes the "underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities" from UIC regulation. Therefore, hydraulic fracturing using diesel fuels is subject to UIC regulation under 40 CFR § 144 and 146. By requiring a permit for hydraulic fracturing using diesel fuels, EPA is following the intent of the Congressional amendment to the SDWA through the Energy Policy Act of 2005.

2. ***What communications, if any, did EPA have with third parties regarding the regulation of hydraulic fracturing activities involving diesel fuel use under the SDWA prior to posting the statements on its website?***

Response:

While EPA has had many conversations with stakeholders about hydraulic fracturing activities since 2005, there was no specific outreach to third parties prior to posting the statement on the website.

3. ***In posting these statements on its website, how did EPA intend to address the problems previously identified by the Agency in applying the Class II VIC regulations to hydraulic fracturing operations in light of the key differences between hydraulic fracturing and typical VIC operations recognized by EPA, such as the "extremely limited" duration of hydraulic fracturing operations and the fact that hydraulic fracturing is "ancillary" to an oil and gas well's principal function of producing oil and gas?***

Response:

EPA is currently in the process of developing guidance to address issues regarding the application of Class II UIC regulations to hydraulic fracturing with diesel fuels.

4. ***What consideration, if any, did EPA give to the potential impact of its statements on the position set forth on EPA's website that oil and gas production wells are not regulated by the VIC program?***

Response:

The Safe Drinking Water Act as amended by the Energy Policy Act of 2005 states that

> *"The term 'underground injection' –*
> *(A) means the subsurface emplacement of fluids by well injection; and*
> *(B) excludes –*
> *(i) the underground injection of natural gas for purposes of storage; and*
> *(ii) the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities."*

The statement on the website was information restating a longstanding, established interpretation of the statute.

5. ***What efforts, if any, did EPA make to communicate with states having primacy over the Class II program regarding its decision either before or after posting the statements on its website?***

Response:

Because the website reflects existing law and regulations EPA did not believe that consultation with primacy states was necessary. See answer to 2.

6. ***What efforts, if any, did EPA make to inform the regulated community about the Agency's action either before or after posting the statements on its website?***

Response:

Because the website reflects existing law and regulations EPA did not believe that consultation with the regulated community was necessary. See answer to 2.

7. ***Does EPA have any objective, documented evidence of the contamination of drinking water supplies as a result of the use of diesel fuel in hydraulic fracturing fluids anywhere in the United States and. if so, could you please share it with the Committee?***

Response:

EPA is currently investigating instances of alleged drinking water contamination in various localities in the U.S. To protect the confidentiality of potential case developments and assure effective enforcement, EPA cannot comment on potential enforcement investigations or responses. It is important to remember that the SDWA requires EPA to take preventative measures to protect underground sources of drinking water. The study EPA is conducting pursuant to House Report 111-316 on the potential impacts of hydraulic fracturing on drinking water resources will provide further insights into this question.